

REFERENCES.

1. *Malaria in Bombay* by Col. Covell, I.M.S., 1928.
2. *A Survey of Aedes Mosquitoes in Bombay*, by Dr. Mhatre, 1934.
3. *A practical way of dealing with Aedes egyptus (Stegomyia fasciata) mosquitoes breeding in country craft*, by Dr. F. D. Bana, Indian Medical Gazette, February 1936.
4. *A Practical way of dealing with Aedes egyptus (Stegomyia fasciata) mosquitoes breeding in country craft*, by Dr. F. D. Bana, Indian Medical Gazette, May 1936.
5. *Mosquito Reduction in the Port Trust Docks and Bunders*, by Dr. F. D. Bana. The Port of Bombay Magazine, July 1936.
6. *Control of Stegomyia fasciata (Aedes egyptus) mosquitoes in Indian country craft by a mosquito-proof metal cap for drinking water receptacles*, by Dr. F. D. Bana, Indian Medical Gazette, June 1938.
7. *Yellow Fever in the East*, by F. D. Bana, The Port of Bombay Magazine, July-September 1939.

XXII.—OBSERVATIONS ON A FEW CASES OF LARVAL
ECDYSIS OF THE INDIAN GLOW-WORM, *LAMPORPHORUS*
TENEBROSUS WLK.

1. *A complete moult of the larva.*

On 12th March '42, a completely moulted skin was found along with a larva kept in a dish and the newly moulted larva was bright and oily with the marginal areas of the dorsal plates more brownish than yellowish. From an examination of the moult it was discovered that the thin cuticle lining the photogenic organ also was cast and the linings of the tracheal tubes were as usual left attached to the moult here and there. The linings of the mouth-parts and even the eye were cast out. The whole moult was complete excepting a small gap at the ventral portion of the thorax, through which I suppose the animal would have wriggled out.

2. *A case of moulting inside a 'closed burrow'.*

A fairly large larva, measuring about 55 mm. in length was left in a glass tray over moist earth on 1st March 1942. It was supplied regularly with snails, but the glow-worm did not feed. It was unusually very inactive. After 2 or 3 days it began to burrow into the earth and by the 9th a deep burrow was constructed against a side of the tray. The burrow was about 2 inches deep and the hollow inside was lined with a smooth surface. The animal had completely buried itself inside the burrow, which was closed with earth above. Occasionally by disturbing it I could see through the glass a bright glow inside the burrow. On 15th morning I saw the creature with a completely moulted skin attached to it. I took both the larva and its moult out and the larva of the fresh instar began to move about. The plates were very soft and delicate, but dark (dark, because ecdysis must have taken place a few hours earlier). The moulted skin had the usual linings of the tracheal tubes attached to it. These linings I could notice inside the hollow of the burrow only on the 15th. So I presume that the larva moulted on the 15th itself, but the whole skin was cast

in the course of a few hours, during which time the animal had assumed the dark colour. The skin is preserved dry.

3. *A case of moulting outside the burrow.*

Another case of moulting was noticed to take place outside. In this case no special burrow was constructed for moulting. The larva having a length of about 50 mm. was placed in a glass tray over moist earth on 1st March '42. It stopped feeding and gradually developed an aversion towards snails. It began to burrow but didn't proceed further. It came out again and lay coiled up, quite exposed and inactive. The only sign of life was observed in the sudden glow of the photogenic organ when hammered by the mounted needle. It also wriggled slightly when pricked. The plates grew darker and darker and the body was considerably narrowed. On 18th March, 1942, morning at 10 a.m., it was quite inactive and I took it to be dead. It was sooty black and the body shrunken very badly. At 2 p.m., to my surprise I discovered the larva in the act of moulting. The metathoracic and abdominal exoskeleton was detached and thrown out posteriorly. The pronotum and mesonotum were still attached to the body. The newly moulted individual was bright yellowish white. At 5 p.m., no further change was observed. But the skin was becoming less and less yellow and the larva was stretching the abdomen and relaxing itself. The skin covering the 2 posterior pairs of legs were cast already and so they were white. At 5-30 p.m., the animal wriggled out vigorously. Dorsally the pronotum and mesonotum were left and ventrally the prosternum and the skin covering the forelegs alone were left. Now it looked as though the animal had a helmet. The two posterior pairs of legs were moving and pressing against each other. The head was kept outside but not so fully thrust out as during locomotion. The dorsomedian line was seen as a white streak. The posterolateral margins of the terga were diaphanous. The 8th abdominal tergum grew very dark in the middle area. The anal brush was completely retracted inside and obviously it had no part to play in ecdysis. The skin gradually became dark and on 19th morning the chitin was completely turned black as in the normal active larvae. But the 'helmet' (or pronotal piece) was not cast till the following day.

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XXIII.—THE FLOWERING OF *STROBILANTHES*
CALLOSUS NEES.

Owing to the uncertainty of the flowering cycle of *Strobilanthes callosus*, locally known as the *Karvi*, I recorded the time of the general flowering which occurred in 1928 in volume xxxiv, p. 264, of the *Journal*, in the hope that some botanist might record the